

97. The area closed to browsers during the year, shows an increase of 114 square miles. In the reserved forests of Gókák in Belgaum, the grazing of goats and sheep was prohibited. The total area closed to all animals, in the Circle, is the same as the previous year's, but there is an increase of 1, 4 and 24 square miles in Southern Kanara, Belgaum and Kolábá, respectively. Twenty-seven square miles of the area closed during the "whole year" in 1893-94, were only closed for a "part of the year" in 1894-95.

98. The number of cattle impounded during the year under report and the year before, in open and closed forests, is given below :—

| Division.                       | NUMBER OF ANIMALS IMPOUNDED<br>DURING 1893-94. |                       |        | NUMBER OF ANIMALS IMPOUNDED<br>DURING 1894-95. |                       |        |
|---------------------------------|--|-----------------------|--------|--|-----------------------|--------|
|                                 | In open<br>Forests.                            | In closed<br>Forests. | Total. | In open<br>Forests.                            | In closed<br>Forests. | Total. |
| Northern Division of Kanara ... | 111  | 157                   | 268    | 3  | 312                   | 315    |
| Central Division do. ...        | 37   | 71                    | 108    | ...  | 269                   | 269    |
| Southern Division do. ...       | 8  | 62                    | 70     | ...  | 17                    | 17     |
| Belgaum Division ...            | 3,527  | 2,019                 | 5,546  | 1,783  | 3,523                 | 5,306  |
| Dharwar do. ...                 | 2,253  | 981                   | 3,234  | 2,752  | 3,501                 | 6,253  |
| Bijápúr do. ...                 | 2,270  | 1,299                 | 3,569  | 2,846  | 1,087                 | 3,933  |
| Kolábá do. ...                  | ...  | 573                   | 573    | 244  | 1,801                 | 2,045  |
| Ratnagiri do. ...               | ...  | 224                   | 224    | 26   | 268                   | 294    |
| Total ...                       | 8,206  | 5,386                 | 13,592 | 7,654  | 10,778                | 18,432 |

99. The increase in the number impounded in Dharwar is ascribed by the Divisional Officer to greater vigilance on the part of the forest-subordinates.

100. There is a relatively large increase in the Central Division, but the number of cattle impounded was still very small for so large an area.

101. In Kolábá, the large increase is mainly due to trespass of cattle on closed areas. Those which were impounded in open forests belonged to persons who declined to pay the fee.

102. The comparatively small increase or decrease in other divisions appears to call for no remark.

### (c).—IMPROVEMENT OF FOREST GROWTH.

#### (1).—Natural Reproduction.

##### (1).—By Seed.

103. Owing to the increased prevalence of fires and the long drought the season was a most unfavourable one for natural reproduction by seed.

104. During my tour in the Gokák-forests of the Belgaum Division, I was pleased to see that there had been at least no deterioration since I last visited them some years ago, the general impression left on my mind being that the better parts had, if anything, improved.

105. In the Bijápúr Division, which is the driest in the Circle, I was struck with the excellent natural growth, from seed of *Dodonæa viscosa* and *Chloroxylon swietenia* in places in which sand had collected in the interstices of rock, or in the hollows. But, at the same time, it was very apparent that cattle had trespassed greatly on the closed portions of the reserves, and it seems to be necessary in this, as well as in other dry districts, to resort to the fencing of closed areas. If, therefore, barbed wire-fences, which are about to be tried in the more valuable forests, prove a success, it may perhaps be worth while to introduce them in the scrub-jungles of Bijápúr, Dharwar and Belgaum, in none of which illicit grazing can, it seems, be suppressed by ordinary means.

106. Curiously enough, some of the best natural reproduction by seed is to be found in the young coppice-forests from which fuel for the West Deccan Railway is procured. In them, vigorous young seedlings of the better kinds may be seen flourishing even under dense coppice. Numerous seedlings of the following species were noticed :—*Careya arborea*, *Xylia dolabriformis* (now

reckoned a much better material for sleepers than teak), *Terminalia tomentosa*, *T. paniculata* (both excellent timber species), *T. chebula* (a good timber-tree, besides yielding the myrobollam of commerce). This seedling-growth is a very satisfactory feature in the regeneration of these fuel-forests. It should ensure their permanence and improvement, and may perhaps be ascribed to fairly-good protection from cattle-trespass. At present the sustained yield of the area, referred to, is about 50,000 tons of 68 cubic feet each, but when it is fully stocked, the yield will be very much greater.

(2).—*By Coppice.*

107. There is nothing to add, under this head, to what has been written in former reports. Coppice-growth is satisfactory except in comparatively few cases in which the soil, or the stools, have become exhausted.

(2).—*Artificial Regeneration.*

108. The dibbling-in of seeds of the better kinds of tree and the planting, out of seedlings under a certain amount of shade, appear to be the best and cheapest modes of artificially regenerating and improving the jardinaged forests of Kanara. Regular plantations there, or in the poorer jungles of the Circle are rarely completely successful and always very expensive, and the attention of the Department is, therefore, directed to periodical closures in the first place, and, secondly, to the supplementing of natural growth by the dibbling-in of seeds, and by the planting of superior species under cover of the advance-growth. In the more populous parts of the Circle, the difficulty of complete closure is one of the principal obstacles to be overcome, and, with a view to make it more effective, it is proposed, as already observed, to resort to barbed wire-fences, and a quantity has been budgetted for in the estimates for 1896-97.

109. Experiments made above and below the gháts show that planted seedlings of teak and other valuable species are quite able to establish themselves without aid if provided with a moderate amount of shade. Ample evidence of the truth of this assertion exists, for example, in the forests of Katgal below the gháts, and in those of Birchi above the gháts; but teak-seedlings planted out in regular plantations, in the open, require to be watered for one or two seasons, and even then do not seem to thrive. These considerations have led to regular plantations being looked upon with disfavour.

Northern Division of Kanara. 110. In the *Halyál-range*, 6,500 teak-seedlings were planted in the forests in bamboo-tubes.

111. In the *Súpá-range*, 3,300 were put out, and, of those planted last season, 1,500 are reported to be flourishing.

112. In the *Karwar-range*, 1,700 teak-seedlings were put down. Of the previous season's crop, 1,200 teak and 900 *hardas* are reported to be doing well.

Central Division of Kanara. 113. *Yellápúr-range*.—A regular plantation in the Want-máne-jungle proved a failure and was abandoned.

114. The number of young plants put out in plantations was 3,955.

115. The number of young plants surviving in *plantations* was 13,927, against 13,659 in 1893-94.

116. *Ankola-range*.—3,950 seedlings were put out in plantations, and the number of young plants surviving in plantations, was 27,825, against 26,472 in 1893-94.

117. *Mundgod-range*.—4,174 teak-seedlings were put down in the Hulihond-plantation. At the end of the year, 5,114 young plants survived in the plantation. Much damage was done by a fire that swept over this plantation, but it is hoped that the burnt seedlings will shoot up, as some have already sprouted again.

118. Besides the above additions to regular plantations, 16,714 plants were planted in suitable places in the forests of the Central Division; and seeds were dibbled in on 44,386 patches and 33 bag-fuls were sown broadcast.

Southern Division of Kanara. 119. 1,100 plants were put down, from a nursery, in the forest of Katgal, and were looking well at the end of the season.

Belgaum Division. 120. 956 plants of blackwood, *hone* (*Pterocarpus marsupium*) and *matti* (*Terminalia tomentosa*) were put down in the fenced portion of the Hemadge-forest, and, of these, 715 survive.